



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01N 21/00, 21/29, 21/64, B01J 10/00, C07H 19/00	A2	(11) International Publication Number: WO 98/53300 (43) International Publication Date: 26 November 1998 (26.11.98)
(21) International Application Number: PCT/US98/11224 (22) International Filing Date: 22 May 1998 (22.05.98) (30) Priority Data: 08/862,610 23 May 1997 (23.05.97) US (71) Applicant (for all designated States except US): LYNX THERAPEUTICS, INC. [US/US]; 3832 Bay Center Place, Hayward, CA 94545 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PALLAS, Michael, C. [US/US]; 408 Oak Avenue, San Bruno, CA 94066 (US). BRENNER, Sydney [GB/GB]; 17B St. Edwards Passage, Cambridge CB2 3PJ (GB). BRIDGHAM, John [US/US]; 3832 Bay Center Place, Hayward, CA 94545 (US). CORCORAN, Kevin [US/US]; 3832 Bay Center Place, Hayward, CA 94545 (US). GOLDA, George [US/US]; 3832 Bay Center Place, Hayward, CA 94545 (US). (74) Agents: POWERS, Vincent, M. et al.; Dehlinger & Associates, P.O. Box 60850, Palo Alto, CA 94306-0850 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: SYSTEM AND APPARAUS FOR SEQUENTIAL PROCESSING OF ANALYTES (57) Abstract An apparatus and system are provided for simultaneously analyzing a plurality of analytes anchored to microparticles. Microparticles each having a uniform population of a single kind of analyte attached are disposed as a substantially immobilized planar array inside of a flow chamber where steps of an analytical process are carried out by delivering a sequence of processing reagents to the microparticles by a fluidic system under microprocessor control. In response to such process steps, an optical signal is generated at the surface of each microparticle which is characteristic of the interaction between the analyte carried by the microparticle and the delivered processing reagent. The plurality of analytes are simultaneously analyzed by collecting and recording images of the optical signals generated by all the microparticles in the planar array. A key feature of the invention is the correlation of the sequence of optical signals generated by each microparticle in the planar array during the analytical process.		

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(54) Title: SYSTEM AND APPARAUS FOR SEQUENTIAL PROCESSING OF ANALYTES (57) Abstract <p>An apparatus and system are provided for simultaneously analyzing a plurality of analytes anchored to microparticles. Microparticles each having a uniform population of a single kind of analyte attached are disposed as a substantially immobilized planar array inside of a flow chamber where steps of an analytical process are carried out by delivering a sequence of processing reagents to the microparticles by a fluidic system under microprocessor control. In response to such process steps, an optical signal is generated at the surface of each microparticle which is characteristic of the interaction between the analyte carried by the microparticle and the delivered processing reagent. The plurality of analytes are simultaneously analyzed by collecting and recording images of the optical signals generated by all the microparticles in the planar array. A key feature of the invention is the correlation of the sequence of optical signals generated by each microparticle in the planar array during the analytical process.</p>		

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/11224

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G01N 21/00, 21/29, 21/64; B01J 10/00; C07H 19/00

US CL : 422/50, 55, 82.05, 82.07, 129; 536/22.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 422/50, 55, 82.05, 82.07, 129; 536/22.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

none

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, MEDLINE, BIOSIS

search term: apparatus, flow chamber, fluidic means, detection means, DNA, fluorescent, deliver reagents

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,587,128 A (WILDING et al.) 24 December 1996, see entire document.	1-7
Y	US 4,911,782 A (BROWN) 27 March 1990, see Abstract.	2-3



Further documents are listed in the continuation of Box C.



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Date of the actual completion of the international search

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Name and mailing address of the ISA/US
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Authorized officer


JOYCE TUNG

Telephone No. (703) 308-0196